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A model for the delivery of comprehensive rehabilitation services in a residential setting to older blind adults from a four-state region is presented in this report. The model uses a research design, which by the use of systems technology performs monitoring, evaluation and case recording functions. The research and demonstration has the objective of identifying effective stategies and significant factors in the social rehabilitaiton of older persons with severe visual impairment.

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NEW YORK INFIRMARY

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"CILS: A Model For The Social Rehabilitation Of Older Persons With Severe Visual Impairment"

R. Rembert Aranda

March 1974

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FOREWORD

Accountability is the theme in our contemporary society. It is being demanded of the highest levels of government, of private corporations, of union activities and even non-profit corporations and agencies. There is an almost universal concensus that individuals, corporate bodies and organizations must be accountable for their actions. It is becoming, if it was not before, a basic truth.

Responding to this demand for accountability has been a boon to researchers and management consultants. A review of current literature quickly reveals that there is no one method, design or approach to this problem. Systems range from simple nose counting to complex recording and analysis of the finest details of activity. If anything is apparent, it is that there is no single "best" way, rather it is necessary to tailor the design to the needs and requirements of the specific individual organization or activities.

The Center for Independent Living is a recently established program of the New York Infirmary. There is no more opportune time to implement a program evaluation system than to incorporate it into the structure of a new organization or activity. The following pages describe the initial efforts of this Center to design a comprehensive rehabilitation care system with a built-in program evaluation model that will

Produce student information

Provide rehabilitation process monitoring

Include a data collection system that will permit analysis of the impact on individuals served

Determine the success of the facility in meeting its goals including a cost benefits analysis.

It may seem presumptuous of us to distribute an interim progress report on our activities at a time when they are not yet fully implemented. We have been moved to do so only because of the wide spread interest in this approach and the apparent dearth of working systems of program evaluation in the rehabilitation fields.

We wish to remind the reader that this approach is only one of numberless possible designs for achieving the outcomes listed above. We certainly hope that you find them stimulating, thought provoking and helpful in developing your own systems of accountability. It is our intentions to issue such progress reports on an annual basis. We certainly will welcome any comments, suggestions, criticisms, recommendations or reactions in any form. We would be delighted to establish communication lengths with any other agencies or facilities embarking on a similar effort in

order to share experiences and to avoid pitfalls. We will look forward to hearing from you.

Douglas E. Inkster, Ed.D.
Director

Acknowledgements

This interim Report on the rehabilitation program conducted by the New York Infirmary Center for Independent Living could not have been completed without the cooperation of many persons. I extend my sincere gratitude to Dr. Douglas E. Inkster, Director of the Center for his support and guidance, and to Drs. Annemarie Crocetti and Benjamin Papell, the Center Research Consultants, who have been of invaluable assistance in the design of the model and in the preparation of this report.

I am, as well, indebted to the direct service staff of the Center for their cooperation in the development of evaluative frameworks and data collection instruments in their respective areas.

I also wish to acknowledge the generous support of Robert Lee Robinson, Statistical Director of the American Foundation for the Blind, particularly during the early stages of the design; and that of Zofja Jastrzembska, Assistant Director of the Foundation's International Research Information Service.

I would also like to thank Christine Jenda for her excellent typing of the report and tables.

The sole responsibility for any remaining errors is mine.

R. Rembert Aranda
Research Director

"CILS: A Model For The Social Rehabilitation Of Older Persons With Severe Visual Impairment"

SECTION I

Introduction

1. Background

The Center for Independent Living is a residential rehabilitation facility providing intensive rehabilitation instruction, psychosocial services and ancillary medical care to older visually impaired adults from the states of Connecticut, New Jersey, New York and Pennsylvania.

The Center program contains as an integral element a research component, primarily concerned with systematic documentation and evaluation of the Center program.

The Center for Independent Living came into existence to meet the needs of blind persons not currently met by existing rehabilitation programs. To discover these needs, the Board of Trustees of the New York Infirmary (the Center's sister institution) commissioned the management consulting firm of Booz, Allen and Hamilton to conduct a study. The consulting firm discovered that although half of the blind and visually impaired population is over 65 years of age, only about a tenth of the fiscal resources spent in service to the blind are channeled to this group. The principal reason for this skewed distribution is believed to be the traditional emphasis on vocational rehabilitation, providing services to those rehabilitants expected to obtain gainful employment.

The consulting firm recommended that the New York Infirmary Fund for the Blind develop a social rehabilitation training program for the geriatric blind. The Board followed this recommendation and the consulting firm prepared a grant application request to the Department of Health, Education and Welfare for a research/demonstration rehabilitation program for the geriatric blind. The grant request was approved. This program was conceived as a research and demonstration project, to generate research analyses to aid the Board of Trustees in evaluating the effectiveness of the program, and to assist others in the field of planning and providing rehabilitation services to the older blind.

The Booz-Allen and Hamilton grant application request proposal, identified the emphasis of the Center for Independent Living research effort to be on (1) the development of educational techniques enabling the older blind to function independently, and (2) the investigation of leisure time and personal development activities particularly suited to older blind persons.

As outlined in this proposal, the purpose of the research investigation was defined to be answering the following questions in the context of the Center's on-going program:

Which time sequence is most effective?

What leisure time activities are most useful?

Where is more or less emphasis in training needed?

How well do groups of different characteristics respond to the training provided?

How is rehabilitation enhanced by different mixes of training staff?

How well is demonstrated skill competence maintained?

The investigations leading to the answer of these questions are described in the aforementioned proposal as of an experimental nature interfacing with programmatic components in the areas of:

Training Techniques

Length of Training

Schedule of Training

The Degree of Intensity of Exposure to Educational Areas

Number and Mix of Training Staff

Amount of Group Interaction in Which Training is Given

Types of Leisure Activities in Which Training is Given

This experimentation was conceived as systematic and objectively measureable, and involving consultation with rehabilitation instructors and other professionals in the field.

Follow-up, a major component of the research effort, was described to be concerned with:

(a) The usefulness and completeness of training relative to the daily needs of the client.

(b) The usefulness of leisure activities.

(c) Further exploration of potential leisure activities.

(d) The extent of involvement of the client with activities outside the home.

(e) Observation of the mental and physical status of the client relative to that before and during the training program.

(f) Overall independence achieved by the client.

1.1 Program Goals

During our first year of implementation the translation of the grant proposal into an operating program design and operational goals has been effected.

The major goals of the Center for Independent Living program are outlined below:

(1) To provide rehabilitation instruction services to older individuals with severe visual impairment, residing in the states of Connecticut, New Jersey and New York with the aims of promoting independent functioning to

a. avert institutionalization

b. reduce dependence on others brought about by visual impairment.

(2) To provide avocational development services, which enhance the impact of rehabilitation instruction, and which provide avenues to the pursuit of a satisfying life after completion of the program.

(3) To provide supportive social, psychological, and medical services which will enhance the student's ability to profit from rehabilitation instruction.

(4) To provide linkage services to facilitate integration of the student with his community on home return, to enhance the relevance of training, and to allow for continuity of care.

(5) To conduct follow-up investigations to assess over time, the maintenance and relevance of rehabilitation training after home return.

2. Review of Research

Prior to commencing work on the research design a review of research was undertaken. This review included the literature in the field and interviews with research professionals in the field.

The review of research focused on three areas:

(1) The blind population.

(2) Rehabilitation services to the older blind.

(3) The CINCH design.

2.1 The Blind Population

A number of studies have been conducted to identify the characteristics of the "blind"[1] population of the United States. A variety of factors join forces in making this a difficult task:

(1) The reluctance of visually impaired persons to be labeled "blind"; and of ophthalmologists and other blindness system[2] care providers to act as agents in labeling as "blind" their clients (particularly those of upper income ranges)[3].

(2) The lack of uniform data collection systems to generate statistical data based on the numbers and characteristics of persons with severe visual impairment.

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1 The definition of blindness used throughout this report is that of the Social Security Act of 1935 (often referred to as "legal" or "economic" blindness):
"A person shall be considered legally blind whose central acuity does not exceed 20/200 in the better eye with correcting lenses or whose visual acuity is greater than 20/200 but is accompanied by a limitation in the field of vision such that the widest diameter of the visual field subtends an angle no greater than 20 degrees."

2 Throughout this report "blindness system" describes the set of persons who are blind and the set of organizations, and institutions who provide services to the blind.

3 Dr. Eric Josephson addressing a symposium sponsored by the American Foundation for the Blind, noted that the stigma associated with blindness became much less great in the thirty years between 1938 and 1968.

(3) The definition of legal blindness is such that we group under this label a quite great range of visual performance - ranging from those with enough vision to read print to those with "total blindness", i.e., the inability to perceive light at all. Furthermore, studies of blind populations have varied in their definition of blindness, as well as in regards to their methodological reliability[4].

Although the validity of projecting available data on small blindness populations to total population is doubtful, such a projection prepared in 1968 by The Organization for Social and Technical Innovation[5], anticipates an increase in the national blind population, with greatest increases in the age grouping over 65 years, and in the race grouping of "non-whites."

The Model Reporting Area for Blindness Statistics (MRA) is a data collection and analysis effort involving 16 states who have agreed to uniform definitions and precedures in the registering of blind persons[6]. The strength of the MRA data is its uniformity, however, household surveys suggest that the MRA data has serious limitations in completeness, and in its ability to update registers by removal (for death or other reasons)[7, 8, 9].

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4 Scott, Robert, *The Making of Blind Men*, Russell Sage Foundation, New York 1969.

5 Organization for Social and Technical Innovation, *Blindness and Services to the Blind in the United States*, OSTI Press, Cambridge 1968.

6 More information about the MRA effort can be found in:

Kahn, Harold A. and Moorhead, Helen B., *Statistics on Blindness in the Model Reporting Area, 1969-1970*, DHEW Publication #(NIH)73-427.

Anderson, Paul H., *Statistics on Blindness in the Model Reporting Area, 1968*, National Eye Institute, Dept. of Health, Education and Welfare 1971.

7 Ibid.

8 Goldstein, Hyman, *Statistical Implications of the Problem of Geriatric Severe Vision Impairment and Blindness*, Proceedings of Geriatric Blindness Conference, AFB, New York 1968.

9 Organization for Social and Technical Innovation, op. cit.

The most recently published MRA figures (December 31, 1970) for the states of Connecticut, New Jersey and New York show a registered blind population of 45,213 persons; 48% male and 54% female, 73% of which are of age 45 or older, and 49% of which is age 65 or older. (See Figure 1.3A). The greatest number of blind persons in the MRA registers for these three states is found in New York (73.5%), as shown in Figure 1.3B.

FIGURE 1.3A: REGISTERED BLIND PERSONS BY STATE AND AGE

STATE	TOTAL	UNDER 45	45-64	65 +	UNKNOWN
Conn.	3,766	1,206	871	1,660	29
N.J.	8,201	2,557	2,239	3,233	172
N.Y.	33,246	8,083	8,012	15,955	1,196
TOTAL:	45,213	11,846	11,122	20,848	1,397
% OF TOT:	100.0	26.2	24.6	46.1	3.1

FIGURE 1.3B: MRA REGISTERS, BLIND PERSONS, BY STATE (1970)

STATE	NUMBER	% OF TOTAL
Conn.	3,766	8.3
N.J.	8,201	18.1
N.Y.	33,246	73.5
TOTAL	45,213	100.*

* does not add up to 100.0% due to rounding.

The number of first additions to these registers in 1970 for the Center catchment area was 3,854. A large number (51%) of these were of unknown age, however, new additions of known age were largest in the over 45 age group. As far as extent of blindness, only a small number (10.8%) of the catchment area blind population is totally blind. Nearly half (47.5%) of the persons on the blind registers of these three states have a significant amount of residual vision. Vision of or better than 5/200, allows for the ability to distinguish the fingers of one hand.

Figure 1.3C shows the distribution of blindness, by extent in the

catchment area:

FIGURE 1.3C: NUMBER OF BLIND PERSONS BY EXTENT OF VISION, REGISTERED (MRA) IN CONNECTICUT, NEW JERSEY AND NEW YORK (1970)

EXTENT OF VISION	NUMBER	PERCENT OF TOTAL
Absolute blindness	4,875	10.8
Light perception/projection	5,947	13.2
Less than 5/200	7,432	16.4
5/200 to 20/200	21,498	47.5
Restricted field	3,792	8.4
Unknown	1,669	3.7
TOTAL:	45,213	100.0

More detailed summary tables of MRA data are found in Appendix A.

Based on Hurlin's Statistics, Booz, Allen and Hamilton estimated the prevalence of blindness in the four state service area of the Center at 70,900. This estimate is depicted in Figure 1.3D.

As is evident by comparison of Figures 1.3B and 1.3D, the Booz, Allen estimate coincides well with the MRA register data.

FIGURE 1.3D: PREVALENCE OF BLINDNESS FOR STATES OF CONNECTICUT, NEW JERSEY, NEW YORK AND PENNSYLVANIA[10]

STATE	RATE/1,000 POPULATION	EST. BLIND POPULATION
Connecticut	1.63	4,100
New Jersey	1.88	11,500
New York	1.98	33,000
Pennsylvania	1.63	22,300
TOTAL:		70,900

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10 As estimated by Booz, Allen and Hamilton for original grant proposal.

The consulting firm estimated the incidence of blindness in the service area to be about 10%; approximately 3,500 of these persons are over 65 years of age.

Another population characteristics study of interest to the Center was the DHEW Aid to the Blind (AB) Recipients Characteristics Study of 1962 and 1970. The summary characteristics for the three states in our catchment area in the 1970 study (New Jersey, New York and Pennsylvania)[11] provide insight into the dimensions of the economically disadvantaged, visually impaired populations of these states. The 1970 age distribution of AB recipients is also weighted greatly towards advanced age: 80% of the recipients are of age 50 or older, and 49% became blind at age 50 or older.

The AB studies show that the larger number of AB recipients in these states have received no blindness related training or social services and that 79% of those who have entered vocational rehabilitation programs have not completed the training. Summary characteristics of AB recipients are found in Appendix B, Tables 1, 2, and 3.[12]

The New Jersey Commission for the Blind and Visually Impaired conducted a needs analysis study of older (age 60 and over) non-institutionalized adults with severe visual impairments.[13] This study identifies health-related problems as one of the greatest need areas of this population. Other needs emphasized by the study were income, mobility and housing.

Older visually impaired adults represent a major Center programmatic concern not only because they are the largest group of blind persons, but because they are as well the population segment receiving the smallest allocation of blindness system resources. As a blind person grows older, the prospects of receiving blindness system services diminishes. Much of the recent literature in the field

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11 Connecticut was not included in the tabulations owing to its small number of AB recipients (235).

12 An excellent summary of the 1962 AB study can be found in an article by Robert H. Mugge in Welfare in Review, April 1965: *Recipients of Aid to the Blind.*

13 New Jersey State Commission for the Blind, *Blindness in the Vintage Years*, Newark 1972.

addresses this skewed delivery of services. The work of Dr. Robert Scott[14], and Dr. Eric Josephson[15, 16] thoroughly address this issue. Within the comprehensive report of the Organization for Social and Technical Innovation[17] this issue is also addressed.

2.2 Rehabilitation Services To The Older Blind

Discussions between Booz, Allen and Hamilton and national experts in the field including Dr. Douglas McFarland[18] indicated a need in the field for knowledge of effective techniques for the rehabilitation of older blind persons, especially in the area of leisure time development.

Generally, the record keeping methods of rehabilitation centers would not permit ready retrieval of predictive, analytical or monitoring information, nor systematic investigation. As a rule, the creation and maintenance of initial status and progress assessment records is haphazard both in regard to administration and to criteria for assessment, the latter resting largely on the subjective assessment of rehabilitation staff, consequently varying significantly with staff turnover[19, 20, 21].

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14 Scott, op. cit.

15 Josephson, Eric, *The Social Life of the Blind People*, AFB, New York 1968.

16 - - - - - - - - - and Sussman, Martin, *A Pilot Study of Visual Impairment*, AFB, New York 1965.

17 Organization for Social and Technical Innovation, op. cit.

18 Director, Office for the Blind and Visually Impaired, Rehabilitation Services Administration, U.S. Department of Health, Education and Welfare.

19 Bishop, Yvonne, *Comparison of the Effectiveness of a 16 Week Training Program With a 12 Week Training Program in the Rehabilitation of Blinded Adults at St. Paul's Rehabilitation Center*, U.S. Dept. of Health, Education & Welfare, Office of Vocational Rehabilitation Research, Grant #304 Final Report.

20 Mitchell, Mildred, *Some Problems Observed in Rehabilitation Centers.*

21 Organization for Social and Technical Innovation, op. cit.

The review of research did not uncover any efforts by rehabilitation facilities serving the blind to use management information technology to create and maintain systematic record keeping functions uniting the facilities components through a data collection and report generation stream.

2.21 Activities of Daily Living and Grooming

The work of Anne Yeadon[22] has been very helpful in the development of such criteria for the Activities of Daily Living area. Anne Yeadon's book contains a thorough presentation of the use of "instructional objectives" in the instruction of the blind in Activities of Daily Living. Presented are criteria, and suggested plans of instruction for a wide variety of tasks encompassing an entire ADL curriculum. An ADL checklist developed at the Montreal Association for the Blind was helpful in developing approaches to the monitoring and evaluation of ADL and Grooming services.

2.22 Communications

The final report of a project conducted by the Arkansas Enterprises for the Blind[23] which studied eight blindness rehabilitation center's communications program was very helpful in the design of data collection instruments for this area. This report, as well, indicated the need for standardized achievement tests in the Communications areas.

2.23 Orientation and Mobility

The work of Dr. Alfred Leonard has been very valuable in conceptualizing approaches to the evaluation of mobility instruction services. Particularly useful are Leonard's concept

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22 Yeadon, Anne, *Towards Independence: The Use of Instructional Objectives in Teaching Daily Living Skills to the Blind*, to be published by AFB (New York) Spring, 1974.

23 Arkansas Enterprises for the Blind, *The Development of a Syllabus for Instruction in Communicative Skills in a Rehabilitation Center for the Blind*, Little Rock, 1969.

of "Minimal Information Required for Effective Mobility."[24] Leonard's development of maps for blind guidance[25] has been very valuable in the development of mobility technique explorations for our second program year. At this time, we anticipate that auditory maps might be a particularly helpful tool to students in utilizing and maintaining mobility skills.

A monograph of Loyal Apple and Marianne May[26] addressing the need for mobility programs for persons with low vision, outlines a program of perceptual training, and proposes criteria for the evaluation of the rehabilitant's performance. In view of the large proportion of older blind persons who have significant amounts of residual vision, and of the Center's exploration of sensory development techniques, this monograph provided valuable insights. This monograph, as well indicates the absence of objective assessment techniques meaningful to mobility instructors.

2.24 Sensory Development

The work of Dr. Fay-Tyler Norton[27, 28] and Jerry Tobias[29] in training blind persons to utilize their hearing more fully, and of Moe Bergman[30] were of assistance to the Center in the development of approaches to the sensory development area of the program.

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24 Leonard, J. Alfred, *The Concept of Minimal Information Required for Effective Mobility and Suggestions for Future Non-Visual Displays*, Evaluation of Mobility Aids, Proceedings of a Conference, National Academy of Engineering, Washington D.C. 1970.

25 Leonard, J. Alfred, *Studies in Blind Mobility*, Applied Ergonomics, March 1972.

26 Apple, Loyal E. and May, Marianne, *Distance Vision and Perceptual Training*, AFB, New York 1971.

27 Dolan, Cleo B. and Norton, Fay-Tyler M., *Improving and Accelerating the Process of Raising the Hearing of Blind Persons to a Greater Degree of Usefulness*, unpublished final research report, Cleveland Society for the Blind, Cleveland 1960.

28 Norton, Fay-Tyler, *Training Normal Hearing to Greater Usefulness*, New Outlook for the Blind, (Vol. 53, No. 10) December 1959.

29 Tobias, Jerry V., *Binaural Recordings for Training the Newly Blind*, Perceptual and Motion Skills, 1965, 20.

30 Bergman, Moe, *Rehabilitating Blind Persons with Impaired Hearing*, New Outlook for the Blind, December 1959.

2.25 Psychosocial Services

Review of Dr. Eric Josephson's study of the social life of blind persons[31] and Sebastian DeGrazia's study of leisure[32] were of assistance in designing approaches to leisure development investigation. Dr. Josephson's study was also helpful in providibg insight into the psychosocial needs of the older blind. Dr. Irving Lukoff's studies of the blind[33, 34] aided substantially in the development of psychosocial data collection instruments. Dr. Lukoff has investigated the sociological aspects of blindness, the mobility of the blind, and adjustment to blindness, developing dependence-independence typologies. Interviews were held wit- Dr. Lukoff to discuss his findings, and the development of the Center's research design. These interviews were of great assistance; Dr. Lukoff's suggestions and comments were most helpful in the design of psychosocial data collection instruments.

The Hunt movement scale[35, 36, 37, 38] for assessing the impact of social work services, presented interesting considerations to the development of evaluation approaches in this area. Of particular interest were findings which demonstrated significant agreement among social work practioners in the use of this scale. Although the construction of this scale is quite different from that of the instruments to be used as data input for this area, the reliability of the scale, particularly when used by social workers

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31 Josephson, Eric, *The Social Life of Blind People*, AFB New York 1968.

32 DeGrazia, Sebastian, *Of Time, Work, and Leisure*, Twentieth Century Fund, New York 1962.

33 Finestone, Samuel, Lukoff, Irving and Whiteman, Martin, *The Demand for Dog Guides and the Travel Adjustment of Blind Persons*, Columbia University, New York 1960.

34 Lukoff, Irving and Whiteman, Martin, *The Social Sources of Adjustment to Blindness*, AFB, New York.

35 Hunt, J. McV., *Measuring Movement in Casework*, Social Casework, November 1948.

36 Hunt, J. McV., Blenkner, Margaret; and Kogan, Leonard S., *A Field-Test of the Movement Scale*, Social Casework, July 1950.

37 Kogan, Nathan; Kogan, Leonard S., and Hunt, J. McV., *Expansion and Extension of Use of the Movement Scale*, Social Casework, January 1952.

38 Shyne, Ann W. and Kogan, Leonard S., *A Study of Components of Movement*, Social Casework, June 1958.

having attained master's degrees or higher, suggests a disciplinary consistency of potential value to the Center, in the implementation of the social work components of our research design.

The articles of Mildred Stern[39, 40] about a Metropolitan Society for the Blind program providing recreational services to older blind citizens in the Detroit area and one by Arthur Copeland[41] support the need for leisure time activity programs for older, visually impaired individuals.

A paper presented by Professor Scott[42] provided very useful insight into the sociological implications of aging, and the relationship between aging and blindness. This paper also highlights the health problems of the elderly; Dr. Scott cited a recent study showed that 45% of all those over age 65 suffer from conditions that limit their ordinary living activities. He as well cited other studies which indicated the higher incidence of hospitalization, and longer hospitalization stays of the elderly.

Interviews with Kenneth Pommerenck, Director of Services for the Aging for New York Communities Aid Association were helpful in the exploration of approaches to the assessment of attitudes towards aging as a factor in rehabilitation.

We have decided to administer the Oberleder Attitude Scale[43] to students, as part of the initial assessment. We expect this scale to provide data on Center student's attitudes toward aging, not only for longitudinal measurement, but as well for comparison with other programs which have used the Oberleder Scale.

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39 Stern, Mildred F., *Activity or Idleness: Restoration of Social Contacts Among the Elderly Blind*, The New Outlook for the Blind, June 1969.

40 Stern, Mildred F., *The Aging Blind and Leisure Time Activities*, The New Outlook for the Blind, February 1970.

41 Copeland, Arthur E., *Recreation for the Aging Blind*, The New Outlook for the Blind, February 1961.

42 Scott, Robert, *The Social and Cultural Context of Aging in American Society*. Proceedings of the Research Conference on Geriatric Blindness and Severe Visual Impairment, AFB, New York 1968.

43 Oberleder, Muriel, *An Attitude Scale to Determine Adjustment in Institutions for the Aged*. Journal of Chronic Diseases, 1962, 15.

2.3 The CINCH Design[44]

CINCH is an acronym for Computerized Information Network for Community Health. CINCH is an integrated health care system. The CINCH model supplies information to helping professionals to manage the delivery of services under predetermined standards of quality to individuals and to populations. The information generated by the CINCH system provides professionals monitoring tools to ensure that an individual receives prescribed care. Concurrently, CINCH generates a Community Data Base which yields predictive and analytic data, and administrative and statistical reports. These ends are met using information for the most part routinely collected, and at minimal expense.

Although CINCH was explicitly designed as a health care model for use in the practice of community medicine, the system was reviewed in great detail because it as well generated a variety of service delivery and information management concepts of value and relevance to the research/evaluation effort of the Center.

CINCH was developed out of actual service programs with multi-problem, indigent service populations, and from a patient-oriented analysis of the health care system. Integral to the CINCH model is the "Problem Concept"[45]. The "Problem Concept" involves not only the identification of the health "problems" of an individual or population, but as well the definition of a care plan and the designation of resources for the plan for each of the "problems" identified; and the carrying out of the plan as predefined.

The data base of CINCH includes not only information pertaining to the services provided by a care facility, but as well information on all community resources bearing on the health of an individual. This data base is used for planning and evaluation as well as for treatment ends.

This approach is of particular importance to the Center, since the region served by the Center contains a wide variety of community settings, which must be considered in the planning and evaluation of the program.

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44 Crocetti, A. F.; Papell, Benjamin, et al., *CINCH, An Integrated Health System.* Community Profile Data Center (DHEW) Technical Paper Series No. 2, Paper 2-1. 1970.

45 The CINCH publication discusses this concept as the "Risk Concept"; the authors, however, subsequently have discussed it as the "Problem Concept", a term they believe more clearly describes it.

Discussions with Dr. Barbara Braden[46] of the New York Department of City Planning were of assistance in securing a tie-in to community resource and socio-demographic data for New York City.

The elements of CINCH are not only concerned with the aspects of health care relating to the individual, but as well with the optimal utilization of the resources of a facility, by process monitoring and evaluation.

The research design of the Center, (Section II of this report) represents a modified application of the service delivery and evaluation concepts developed by the CINCH team.

Dr. Annemarie F. Crocetti, and Dr. Benjamin M. Papell, two of the authors of the CINCH design have been involved in the Center's efforts as research consultants.

Dr.'s Crocetti and Papell have been involved continuously in the development of the Center research design, and will continue to act as research consultants during the first design implementation stages.

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46 Director of Education and Social Service Planning.

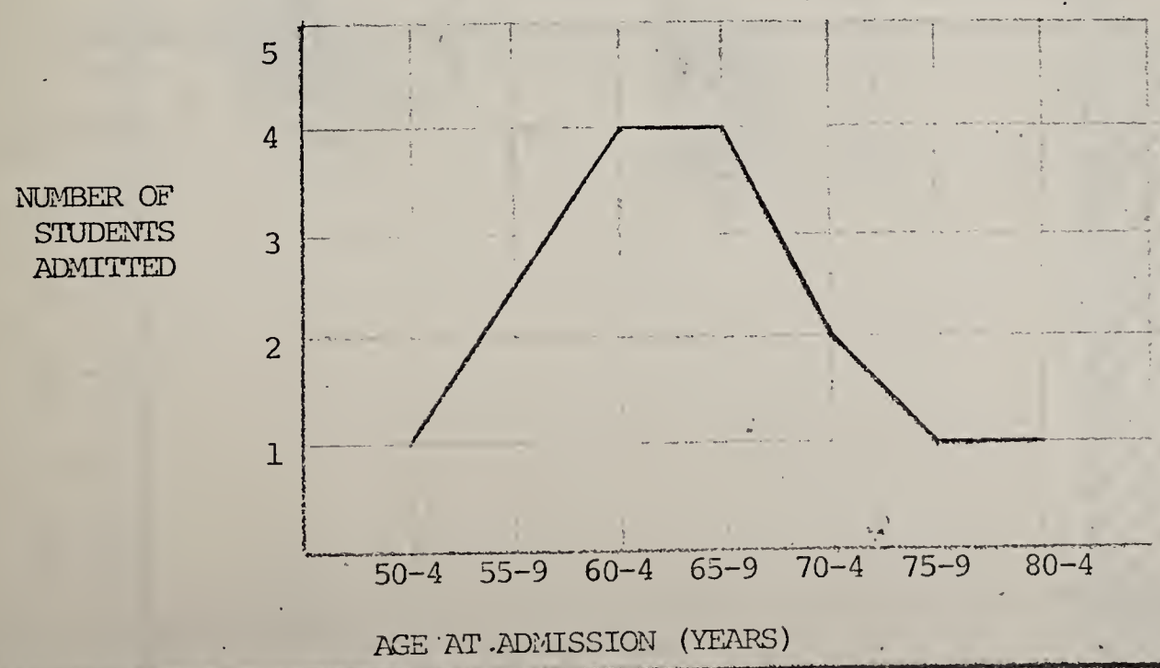
3. Summary Characteristics Of The Students Served By The Center, May to December 1973.

The first thirteen students of the Center were predominantly women. The students ranged in age from 52 to 82 years, with a mean age of 67.6 years. 61% of the students were of age 65 or older. Figures 3A and 3B depict the distribution by sex and age of these students.

FIGURE 3A: STUDENTS BY SEX AND AGE AT ADMISSION

AGE	TOTAL	MALE	FEMALE
50-54	1	0	1
55-64	4	1	3
65-74	6	1	5
75-84	2	1	1
85 +	0	0	0
TOTAL:	13	3	10

FIGURE 3B: STUDENTS ADMITTED DURING PERIOD OF 5/73 TO 12/73 BY AGE.

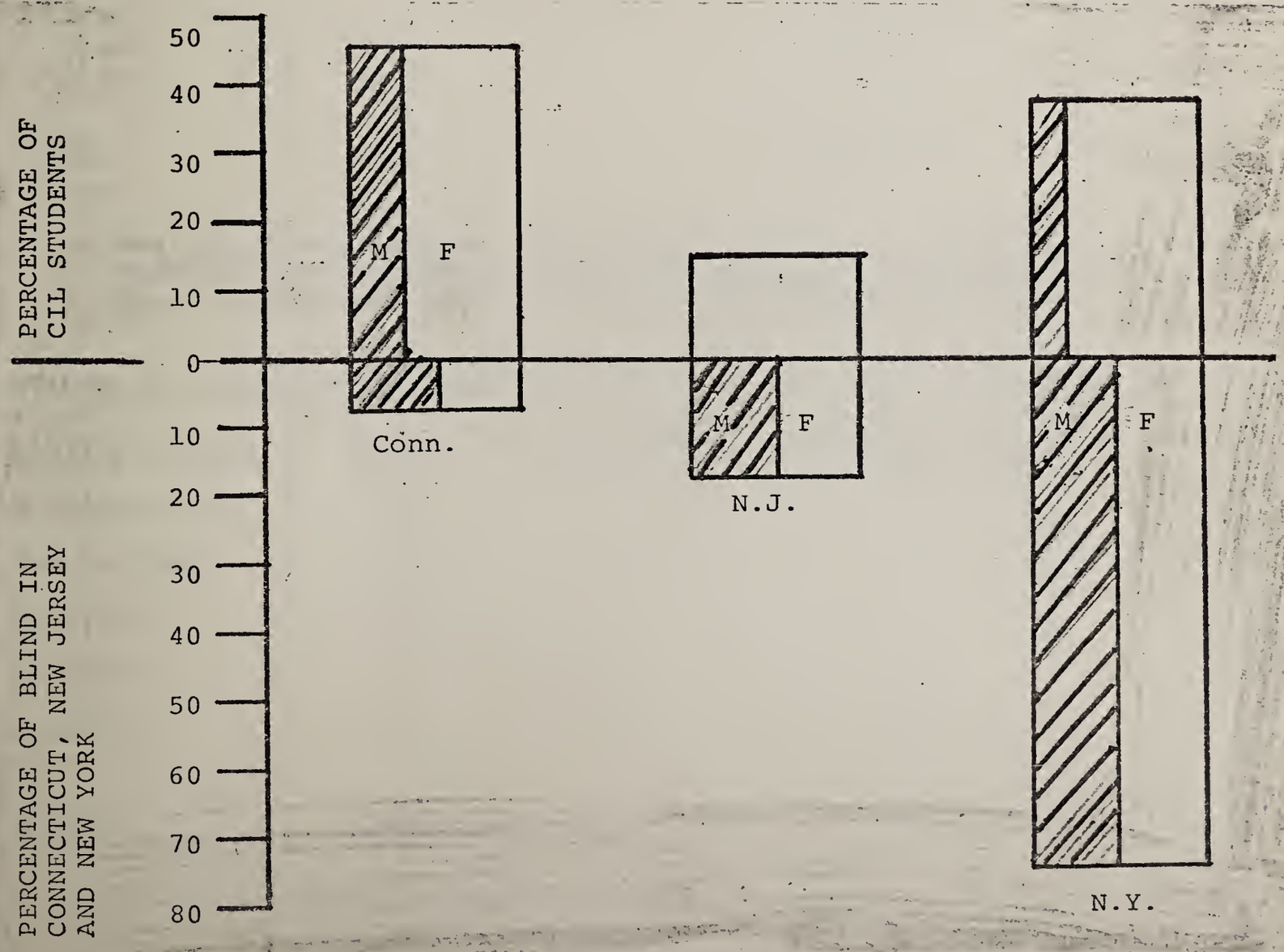


As shown in Figures 3C and 3D, most of the students (10) were white, and in proportion to the number of persons on state blindness registers, Connecticut referred the largest number.

FIGURE 3C: STUDENTS BY STATE OF RESIDENCE AND RACE

STATE	TOTAL	WHITE	BLACK
Connecticut	6	5	1
New Jersey	2	1	1
New York	5	4	1
TOTAL:	13	10	3

FIGURE 3D: COMPARISON OF TOTAL BLIND POPULATION AND CIL STUDENTS BY STATE



The range of time blind at admission was from two months to 30 years. Eleven of the students had been blind less than 5½ years at admission; seven had been blind less than 3½ years and five had been blind less than two years.

Figure 3E illustrates admissions by cause of blindness and mean length blind at admission.

FIGURE 3E: STUDENTS BY CAUSE OF BLINDNESS AND LENGTH BLIND AT ADMISSION TO PROGRAM

CAUSE	NUMBER	MEAN TIME BLIND AT ADMISSION
Glaucoma	3	2.89 years
Diabetes	1	3.08 years
Cataracts	1	30 years
Keratitis	1	3.17 years
Unknown to Med.	2	2.71 years
Other	5	5.47 years
TOTAL:	13	6.22 years

Most of these students lived alone. Five of the thirteen students were widowed, of these three live alone. Figure 3F shows students by marital status and living arrangements.

FIGURE 3F: STUDENTS BY MARITAL STATUS AND LIVING ARRANGEMENTS

MARITAL STATUS	TOTAL	LIVE ALONE	LIVE W/OTHERS
Never married	3	3	0
Now married	2	0	2
Separated	2	1	1
Divorced	1	1	0
Widowed	5	3	2
TOTAL:	13	8	5

All but two of the students were native born Americans. Of the other two, one was of Greek and one of Russian nationality.

The length of stay in the program ranged from three weeks to 17 weeks for students terminated from the program. Mean stay for these students was 11.8 weeks.

SECTION II

The Research/Evaluation Design

The body of knowledge in the field of blindness reviewed during the planning and literature search stages identified overall needs and priorities to which the Center's program is a direct response.

The research/evaluation element of the Center exists to accomplish two ends. The first is the evaluation of the Center's program goals and the processes by which they are attained. The second is to add to the body of knowledge in the field at the level of implementation of service to the older blind.

The four major objectives of the research/evaluation component of the Center for Independent Living are,

(1) To develop and implement student management systems which will assist staff in each of the program's service components in the task of identifying and recording the needs and service plans to meet the needs of students referred for service.

(2) To develop and implement a process monitoring system to generate management information reporting on the needs of the student population served by the program, and the effectiveness and efficiency of the program in responding to these needs, and comparing the demands made on the system with existing resource allocations.

(3) The systematic collection of psychosocial, rehabilitation, instruction-related and medical data on all students referred for service to permit analyses which will constitute a comprehensive evaluation of the success of the Center in meeting rehabilitation goals.

(4) To produce a comprehensive manual to guide planners and administrators wishing to institute the Center's program elsewhere.

To attain the first three objectives, data collection and analysis systems have been developed based on the Center program's commitment to the use of the Comprehensive Rehabilitation Care Model, to maintain accountability for its provision of services, and to meeting the responsibilities of a demonstration project.

1. Student Management Systems

The student management systems are designed to assist service staff in the identification and recording of the rehabilitation needs of the individual, the prescription of service plans, and the delivery of services to meet these needs in each of the program's service areas. Implicit in each of these subsystems is the Comprehensive Rehabilitation Care Model.

1.1 The Comprehensive Rehabilitation Care Model

The Comprehensive Rehabilitation Care Model is a student management model for comprehensive residential rehabilitation care for older visually impaired individuals. Its primary interest is to indicate and record the prescription of services by "helping" professionals and the delivery of such services. In a setting such as the Center for Independent Living there is a wide scope of service: general areas of rehabilitation instruction, social work, avocational development, post-service linkage with home community resources and a variety of ancillary medical services.

The Comprehensive Rehabilitation Care Model may be best understood in terms of its subsystems:

A. Functions of the Center for Independent Living rehabilitation care system.

B. The "need" concept.

C. The linkage role.

D. Periodic student assessment.

E. Integration with home community upon termination.

1.11 A. Functions Of The CIL Rehabilitation Care System

The Center for Independent Living's primary function is to provide comprehensive residential rehabilitation services to older, visually impaired adults, who meet the basic criteria

age (over 55) and visual impairment (legally blind[1]).

In designing a rehabilitation care model it is obviously fundamental to decide what services the system will deliver. Although service decisions are always influenced by external conditions such as budget and agency resources it is essential to have agreement on the services the student should receive in order to ensure delivery and permit evaluation of service. The Center for Independent Living defines the basic responsibilities of its residential rehabilitation program as the delivery of the following services:

(1) Outreach: Dissemination of information about the CIL program to blindness system care providers and to the general public.

(2) Home Interview: Contact with students referred for service in their homes to explain the CIL program and to make arrangements for comprehensive assessment of candidates meeting the intake criteria.

(3) Initial Assessment: Assessment interviews at the Center with all Center care providers to determine the rehabilitation "needs" of the student and to identify the presence of conditions or factors considered to have significant bearing on the rehabilitation process.

(4) Direct Delivery or Referral to Delivery: Provision of services to meet needs identified by assessment.

(5) Post-termination Linkage: Contact with appropriate community resources identified as useful to the student to insure the linkage of the student with the appropriate resources to enhance the independent functioning of the student, to allow for continuity of required care.

(6) Follow-up: Post-termination contact with students to assess the maintenance of acquired skills, and the suitability of service in meeting the demands presented by home return.

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1 The Social Security Act of 1935 definition of blindness, often referred to as "legal blindness" is as follows:

"A person shall be considered legally blind whose central acuity does not exceed 20/200 in the better eye with correcting lenses or whose visual acuity is greater than 20/200 but is accompanied by a limitation in the field of vision such that the widest diameter of the visual field subtends an angle no greater than 20 degrees."

1.12 B. The "Need" Concept

The "need" concept is the dynamic element of this comprehensive rehabilitation care model[2]. An individual "need" is any condition, indicator, or factor defined as requiring continuity or attention until a specified resolution, containment, or finding has been obtained. These definitions are specified by professionals in the respective care delivery disciplines within the scope of the Center's services.

A "Need Profile" or "Assessment Report" is the aggregate of needs identified for a given candidate for service. Within this subsystem, identified needs are translated into discrete rehabilitation plans with specific objectives for each need area; as well as a master rehabilitation plan delineating interfacing responsibilities of all areas.

1.13 C. The Linkage Role

The linkage subsystem connects the student with an appropriate care provider who can deliver the services outlined by the rehabilitation plan, either directly by Center for Independent Living rehabilitation care providers through individualized scheduling, or by referral to other care providers.

1.14 D. Periodic Student Assessment

A comprehensive initial assessment of students indicating rehabilitation teaching areas, avocational development, social service, psychological testing, audiometric examination, ophthalmological and low vision examination, and complete physical examination takes place the first week of residence. Student progress assessment takes place at regular intervals, generally monthly, while the student is in residence.

These assessments provide a measure of student needs and service delivered.

Within the comprehensive rehabilitation model, the periodic

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2 Analogous to CINCH "Problem Concept."

assessment subsystem requires input by the student, as well as that of the care providers. Assessment reports are reviewed with students, who within the comprehensive rehabilitation model, make the final decision regarding the suitability of any rehabilitation plan.

The joint student-professional review of assessment is the basis for the establishment of a "contract" between student and provider formulating an individualized rehabilitation plan.

1.15 E. Integration With Home Community Upon Termination

On termination from the program, it is necessary to link the student with a number of community resources. These linkages are of wide scope, including, for example, alerting community services to provide sighted assistance (reading mail, car service in suburban areas, etc.), medical services and recreational services.

1.2 Activities of Daily Living and Grooming Student Management Subsystems.

Instruction in Activities of Daily Living provides rehabilitation teaching services to meet needs presented by limitations in functioning due to the onset of severe visual impairment. Included are home management, shopping, and a wide range of everyday activities such as eating, lighting cigarettes and pouring liquids.

Instruction in Grooming provides rehabilitation teaching services geared explicitly to restore abilities regarding personal grooming impaired by the loss of vision, inclusive of clothing identification.

The Activities of Daily Living and Grooming data collection instruments which provide input data for the student management subsystems are summarized as follows:

1.21 Activities of Daily Living Subsystem

Ability to handle eating implements.

Ability to pour liquids.

Ability to use safety techniques to prepare basic meals and snacks.

Ability to use safety techniques in the use of the stove.

Ability to use electric appliances.

Ability to clean effectively.

Student shopping activity.

Relative dependence/independence of student regarding home management.

Student dietary restrictions.

Student interest in ADL activities.

1.22 Grooming Subsystem

Ability to handle bathroom activities.

Ability to identify clothing.

Ability to organize clothing and personal effects.

Ability to take care of skin and apply cosmetics.

1.3 Communication Subsystems

1.31 Braille

1.32 Electronic Sound Equipment

1.33 Scriptwriting

1.34 Typing

The communication subsystems provide instruction in braille, use of electronic sound equipment (such as talking book machines, telephones, and tape recorders), scriptwriting using writing guides and/or wide pens for students with enough residual vision, and typing.

The communication areas have the goal of enabling the student to regain as much as possible of the ability to communicate with others.

Below is a summary of the student management data collected by the data collection instruments used as data input by the communication subsystems.

1.31 Braille Subsystem

Ability to use tactile aids and techniques of handling cash.

Ability to read braille alphabet and number cells, specifying standard or giant cells.

Ability to write braille alphabet and number cells, specifying braille writing aid(s) used.

Ability to read braille capital cells and punctuation.

Ability to write braille capital cells and punctuation, specifying braille writing aid(s) used.

Ability to read advanced contracted braille.

Ability to write advanced contracted braille, specifying writing aid(s) used.

Previous training in braille.

Interest in reading prior to onset of blindness.

Current interest in reading, frequency of reading.

Educational level.

Tactile sensitivity and discrimination.

Interest in studying braille.

1.32 Electronic Sound Equipment Subsystem

Ability to use telephone.

Ability to use RCA audio receiver.

Ability to use talking book records machine.

Ability to use cassette tape recorder.

Ability to use reel-to-reel tape recorders.

Ability to use tape recording accessories.

Ownership of talking book machine.

Frequency of "reading" using talking books.

Frequency of reading printed materials.

Frequency of TV/radio listening.

Ownership of tape recorders.

Interest in training in electronic sound equipment.

1.33 Scriptwriting Subsystem

Ability to write own name.

Ability to use a writing guide.

Ability to write entire alphabet.

Ability to write numbers 1-10.

Ability to write notes and informal correspondence.

Extent of residual vision.

Previous training in scriptwriting.

Interest in scriptwriting.

1.34 Typing Subsystem

Manual dexterity.

Familiarity with typewriter.

Ability to discriminate shapes and textures.

Familiarity with paper insertion.

Ability to identify/use lettered keys.

Ability to identify/use function keys.

Ability to identify/use number/symbol keys.

Ability to type informal correspondence.

Ability to address envelopes.

Previous typing training.

Ownership or access to typewriter.

Educational level.

Physical conditions affecting memory, manual dexterity.

Interest and nature of interest in receiving typing instruction.

1.4 Orientation and Mobility Subsystem

The orientation and mobility subsystem provides rehabilitation teaching services to meet the needs presented by limitations in the ability to travel brought on by the onset of severe visual impairment.

Orientation and mobility rehabilitation teaching services are oriented towards instruction in the long cane for independent travel; it includes, however, training in the efficient use of sighted assistance and traveling skills not involving a cane.

Orientation and mobility services have the aim of restoring as much as possible of the student's ability to ambulate independently, through the use of various non-visual travel cues; and by the most efficient use of remaining vision.

The student management data collected by the orientation and mobility data collection instruments is summarized below:

Frequency of travel.

Distance traveled.

Travel aids (cane, dog, etc.) used.

Ability to use touch and hearing to obtain directional and spatial cues.

Orientation ability in unfamiliar surroundings.

Ability to ascend and descend stairs.

Ability to walk indoors.

Ability to walk outdoors.

Ability to cross streets.

1.5 Sensory Development Subsystem

The sensory development subsystem, at this writing, is in the final development stage and will be implemented in the spring of 1974.

The sensory development subsystem will provide rehabilitation teaching geared to enhance the ability of the newly blinded person to utilize his remaining senses in the most efficient manner.

Sensory development training will be designed to supplement the sensory training afforded by other rehabilitation instruction areas.

1.6 Psychosocial Service Subsystems

1.61 Social Work

1.62 Psychological

1.63 Avocational Development

1.64 Community Linkage

The psychosocial subsystems have the purpose of identifying and recording psychosocial needs and rehabilitation plans. These subsystems fulfill the following functions:

(1) Case finding and intake.

(2) Assessment of psychosocial needs.

(3) Delivery of psychosocial services.

(4) Development of avocational interests to enhance rehabilitation instruction and maintenance of skill on home return.

(5) Arranging and effecting appropriate linkage on termination from program to insure continuity of care.

1.61 Social Work Subsystem

1.62 Psychological Subsystem

The social work subsystem and the psychological subsystem function as support for the rehabilitation instruction subsystems.

The major responsibilities of the social work and psychological subsystems are four:

(a) Screening to establish student eligibility.

(b) Remediation of social or psychological problems to enhance the ability of the student to benefit from instructional services.

(c) Provision of psychosocial input inclusive of student response to a group living residential setting to other service subsystems to enhance their service delivery.

(d) Case management of medical subsystem through coordination of service delivery.

The major functions of the social work subsystem and the psychological subsystem are the following:

(1) Outreach.

(2) Case finding and selection.

(3) Home interview.

(4) Psychological testing.

(5) Delivery of on-going counseling, and group discussion services to meet identified student needs.

(6) Identification with the student of suitable overall "independence" goals.

(7) Follow-up, post-termination contact with student to identify completeness and adequacy of training in assisting student to deal effectively in an "independent" manner with the demands of his home environment.

(8) Referral to alternative services if found not eligible for training after home interview, initial assessment week, or any step thereafter.

(9) Attention to student response to group living residential setting.

(10) Attention to medical needs developing during period of residence.

(11) Provision of appliances to enhance ability of student to benefit from rehabilitation.

The student management data collected by the instruments of these subsystems is summarized below:

Referral source and contact person.

Identifying information.

Date of birth.

Ethnicity.

Disposition.

Extent, cause and onset of blindness.

Stability and extent of residual vision.

Use of residual vision, vision aids.

Blindness training/services needed.

Marital status.

Employment status.

Educational level.

Present living arrangements.

Familial/social contact.

Religious affiliation.

Psychological test results.

Response to Center setting.

Attitudes towards blindness.

Attitudes towards aging.

1.63 Avocational Development Subsystem

The avocational development subsystem has delivery functions similar to those of the vocational counseling of agencies serving young and middle aged blind persons. Since the service population of the Center for Independent Living is age 55 or over, the services focus on counseling about and exposure to leisure time interests. These functions fulfill two aims:

(a) The involvement in and development of leisure time activities to enhance the rehabilitation process, and

(b) The development of leisure time interests which enhance the maintenance of rehabilitation skills acquired, and allow the student to live a satisfying life on return to the home community.

The avocational development subsystem is primarily concerned with the identification of leisure time development needs and leisure time development services to meet these needs. The student management data collected by the instruments of this subsystem is summarized below:

Leisure time interests prior to onset of blindness.

Current leisure time interests.

Work history.

Interest in remunerative or volunteer employment.

Changes in use of leisure time since onset of blindness.

Interests student wishes to pursue in future.

Organizational membership.

Recreational services received from blindness agencies.

Socialization patterns.

1.64 Community Linkage Subsystem

The Center's commitment to the Comprehensive Rehabilitation Care Model prescribes the facilitation of optimal integration with the home community upon return.

The community linkage subsystem has the responsibility for identifying and recording the student's needs for service by community resources on termination of the program, the preparation of a relevant community resource inventory, and the development and implementation of linkage strategies to effect post-termination continuity of meeting needs of the student in his home community.

The student management data collected by the community linkage subsystem instruments is summarized below:

Student knowledge and use of community resources:

a) Medical	e) Restaurants
b) Transportation	f) Entertainment
c) Shopping	g) Leisure time
d) Banking	h) Blindness related

Inventory of appropriate resources in above areas.

Student interest and need of community resources.

Present requirements and use of sighted assistance.

1.7 Ancillary Medical Care Subsystems

1.71 General Health Care

1.72 Ophthalmological and Low Vision Examinations

1.73 Audiometric Examination

The ancillary medical care subsystems function as support for the rehabilitation instruction subsystems. The social work subsystem is responsible for coordination. Ancillary medical care is provided by the New York Infirmary, the Center's sister institution, or by other care providers under contract with the Center.

The major responsibilities of the ancillary medical care subsystems are:

(a) Screening to establish eligibility.

(b) Meeting those medical needs which impair the ability of the student to benefit from instructional services.

(c) Provision of medical information, through the social work subsystem, to permit realistic service delivery by other subsystems.

The major functions of the ancillary medical care subsystems are the following:

(1) Client selection.

(2) Identification of medical needs which would impair rehabilitation service delivery.

(3) Identification of medical services or appliances which would enhance the student's ability to benefit from rehabilitation services.

(4) Delivery of medical services to maintain or improve ability of student to profit from rehabilitation.

(5) Delivery of medical services to meet medical needs developing during period of residence.

(6) Identification of appropriate medical plan strategies to aid medical care providers in student's home community in providing continuing post-termination care.

1.71 General Health Care Subsystem

The general health care subsystem has the responsibility of, through comprehensive screening, assessing at admission the general health status of the student, identifying needs of a medical nature, particularly those having a bearing on the rehabilitation process; and of remedying medical problems developing during the period of residence.

The summarized data collected by the instruments of this subsystem are the following:

General physical examination findings.

Serology and other laboratory test results.

X-ray findings.

EKG findings.

Appliance(s) which would enhance student's ability to profit from rehabilitation.

Services indicated by student needs.

Follow-up general medical services indicated.

1.72 Ophthalmological and Low Vision Examination Subsystem

The ophthalmological and low vision services subsystem has the responsibility of assessing, through ophthalmological examination, ophthalmological and low vision needs at admission, especially those indicating the possibility of vision restoration, and those having a bearing on the rehabilitation process.

The orientation and mobility subsystem is responsible for instructing students in the use of any low vision aids or appliances prescribed at the low vision examination.

The data collected by the instruments of this subsystem is summarized below:

Ophthalmological examination findings.

Ophthalmological needs.

Ophthalmological plan to meet identified needs.

Desirability of low vision examination.

Low vision examination findings.

Low vision plan to meet identified needs.

Low vision appliances required to enhance service delivery.

Recommendations regarding lighting to assist instructional staff in maximizing effectiveness of service delivery.

Follow-up ophthalmological or low vision services indicated.

1.73 Audiometric Services Subsystem

The audiometric services subsystem has the responsibility of assessing the student's hearing at admission, identifying needs related to hearing, particularly those having a bearing on the rehabilitation process either in terms of impairing service delivery or of impairing social interaction with other students.

The instruments of this subsystem collect the data summarized below:

Audiometric examination findings.

Audiological or audiometric services indicated by student needs.

Appliances required to enhance ability of student to profit from rehabilitation.

Follow-up audiological or audiometric services indicated.

2. The Monitoring System

The major function of the monitoring system is to provide program management with timely operational feedback to allow modification of program whenever necessary.

The Center services provided within the Comprehensive Rehabilitation Care Model, and recorded within the student management system contain immense detail. It is therefore necessary to monitor the rehabilitation process to ensure that departures from the individualized rehabilitation plan are reported to program management so that appropriate steps may be taken.

2.1 Summary of Center for Independent Living Rehabilitation Process

Intake: Students learning about the Center (through outreach functions) are referred to the Center, either by a care provider in the blindness care system or by self-referral. After determining that the referred student meets basic criteria (age 55 or older and legally blind) an interview between the referred student and the Center social worker is scheduled in the student's home. At this interview, the psychosocial data collection instrument is administered, and the interest of the student in the Center rehabilitation program is explored. If the student is interested in service, a week stay is scheduled at the Center to permit the assessment of the student's needs, his eligibility for service, and his interest in entering the Center rehabilitation program.

Initial Assessment: In the assessment week, the student's needs in the three areas of Instructional, Psychosocial and Medical areas are identified and appropriate rehabilitation plans are identified. These plans are presented to the student who makes the decision regarding the elements of the rehabilitation plan to be implemented. At this point, eligibility for admission to the program is made. Eligibility criteria are need and student interest in receiving service in three or more rehabilitation instruction areas, and absence of psychosocial or medical problems which would not allow the student to benefit from training. Then, either by referral or by development of Center service staff the rehabilitation plan is implemented until the in-stay criteria above are no longer met.

Service Delivery/Periodic Assessment: At monthly intervals, the entire staff meet with the student to review progress, and the suitability of the rehabilitation plan. An adjusted rehabilitation plan is prepared at these meetings, which addresses a change in needs or identification of new needs, on account of progress or other reasons. The adjusted rehabilitation plan

is discussed with the student who makes the final decision about its implementation. The psychosocial and ancillary medical subsystems identify needs and service to meet the needs that develop during and as a response to the period of residence. During this period of residence, the community linkage subsystem identifies home community resource needs, and an adequate strategy; and implements the strategy. When, at a monthly assessment, it is determined that the student no longer needs or wishes instruction in three or more of the rehabilitation instruction areas, a "graduation date" is set.

Post-Graduation: At termination the student is linked with the community to maximize the use and maintenance of rehabilitation skills acquired. Beyond the explicit functions of the community linkage subsystem post-graduation services include mobility and activities of daily living training in the student's home. This training is essentially the review of residential instruction, and instruction in adaptive techniques which will enhance the ability of the student to use this training in his home milieu.

Follow-up: At annual intervals, for a period of three years, follow-up assessments are made. The focus of these assessments is the determination of the relevance of training in aiding the student to meet daily needs on return to his home community, and assessment of rehabilitation skill maintenance.

2.2 Monitoring System Functions

The monitoring system draws on the data collected by the student management system instruments to generate periodic reports in order to identify the following:

(1) Overload on system which will result in failure of subsystems to implement rehabilitation plans.

(2) Divergence from individualized rehabilitation plan, either in not meeting plan goals, or in failing to deliver services.

(3) Comparison of resource needs and allocations for report period.

(4) Length of process steps.

(5) Efficiency and effectiveness of process subsystems in meeting program goals in report period.

As the student management system data base grows, the monitoring system will develop predictive capabilities of greater subtlety to assist program management in identifying

and correcting delivery problems and needs not anticipated by the student management system.

3. Evaluation System

The evaluation system has two major functions.

The first is to enhance the efficiency and effectiveness of the Center program by establishing a data base containing detailed data about the process goals, subsystems, and outcomes allowing analysis in order to evaluate the soundness and viability of program goals.

The second is to meet the Center's responsibilities as a research/demonstration project by collecting data about inputs, process and outcomes in sufficient detail to allow replication of the program elsewhere.

The evaluation system uses as input the data base fed by student management system instruments.

The major aims of the evaluation system are the following:

(1) Evaluation of suitability and viability of program goals.

(2) Evaluation of the efficiency and effectiveness of Comprehensive Rehabilitation Care Model student management systems in meeting program goals.

(3) Cost/benefit analysis.

(4) Identification of differences in student characteristics accepting and rejecting rehabilitation services.

(5) Identification of characteristics and factors associated with successful rehabilitation, such as

length of stay

intensity of training

sequence of process

class mix

differential staff use, such as the use of supervised paraprofessionals

length of blindness at admission.

(6) Identification of factors associated with maintenance of acquired rehabilitation skills on home return.

(7) Identification of leisure time activities which enhance rehabilitation instruction, and maintenance of acquired skills.

(8) To develop criteria regarding level of training needed for "independent" functioning.

4. CILS

CILS in an acronym for Computerized Information Linkage System. The CILS functions as an administrative tool. Since the three operational systems established by the research/evaluation unit use one data base, the application of systems technology is required to perform efficiently and effectively the required data manipulation and linkage operations. By using computers as an administrative tool, the data linkages are effected at low cost and high accuracy in minimum time.

The use of CILS, in addition, enhances the interface of the Center's research and care providing program elements, and permits the most efficient and accurate record maintenance.

4.1 CILS Report Generation

CILS generates five types of reports. The five reports are the following:

(1) Referral profile.

(2) Admission profile.

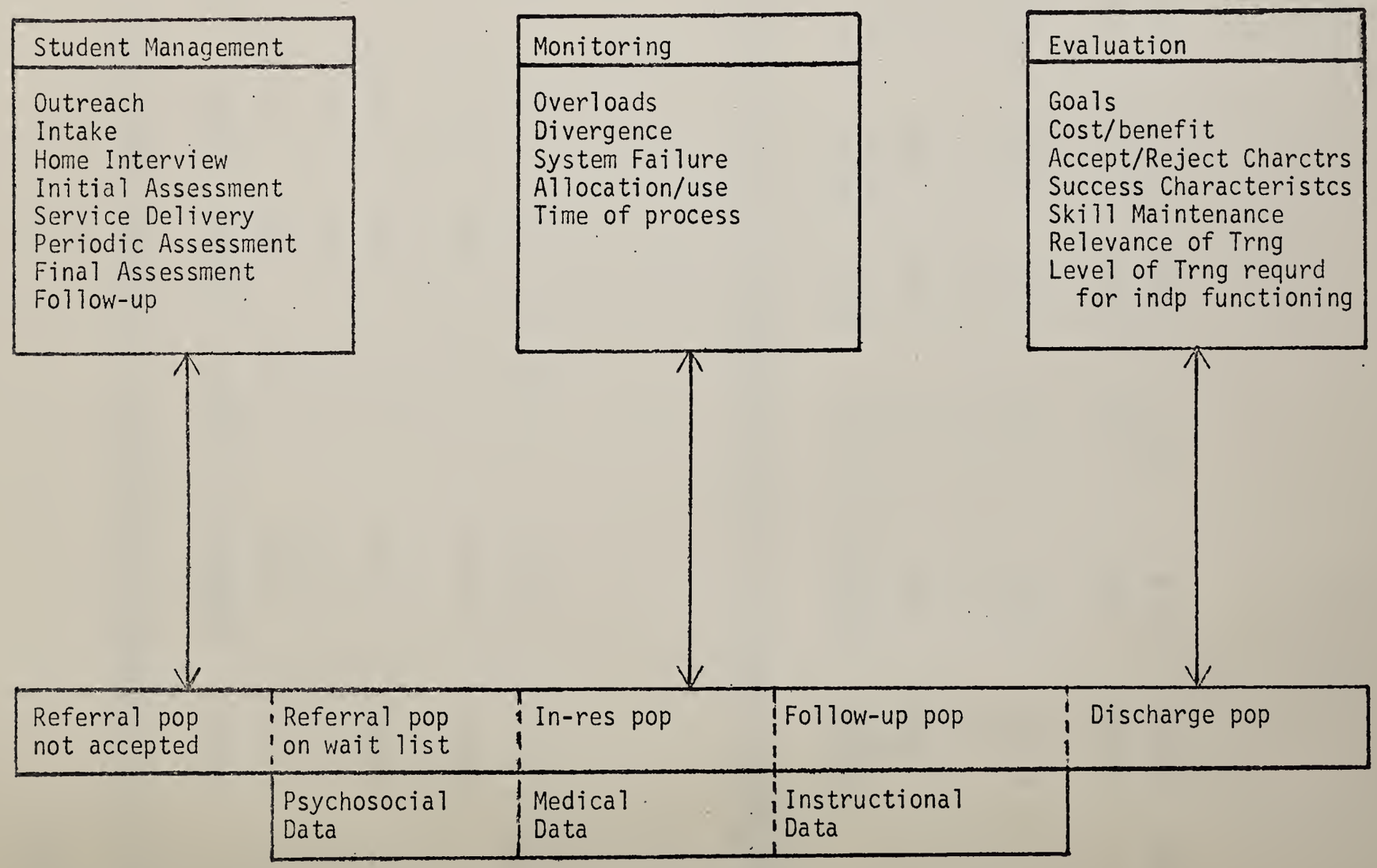
(3) Periodic progress reports to care providers and care coordinators.

(4) "Exception reports", calling immediate attention to deviations from program developed for individual student.

(5) Statistical reports to meet needs of funding bodies.

APPENDIX A

CILS


Student Management
Outreach
Intake
Home Interview
Initial Assessment
Service Delivery
Periodic Assessment
Final Assessment
Follow-up
Monitoring
Overloads
Divergence
System Failure
Allocation/use
Time of process
Evaluation
Goals
Cost/benefit
Accept/Reject Charctrs
Success Characteristcs
Skill Maintenance
Relevance of Trng
Level of Trng requrd
for indp functioning
Referral pop not accepted
Referral pop on wait list
In-res pop
Follow-up pop
Discharge pop
Psychosocial Data
Medical Data
Instructional Data

SUMMARY CHARACTERISTICS OF MODEL REPORTING AREA (MRA) REGISTERS OF BLIND POPULATIONS FOR STATES OF CONNECTICUT, NEW JERSEY AND NEW YORK.

TABLE 4:

NUMBER OF BLIND PERSONS REGISTERED BY STATE AND AGE (1970)

STATE	TOTAL	UNDER 45	45-64	65-74	75-84	85 +	UNKNOWN
Conn.	3,766	1,206	871	524	649	487	29
N.J.	8,201	2,557	2,239	1,287	1,153	793	172
N.Y.	33,246	8,083	8,012	5,682	5,928	4,345	1,196
TOTAL:	45,213	11,846	11,122	7,493	7,730	5,625	1,397
% OF TOTAL:	100.0	26.2	24.6	16.6	17.1	12.4	3.1

TABLE 5:

NUMBER OF FIRST ADDITION TO BLIND REGISTERS, BY AGE OF ONSET, BY STATE (1970)

STATE	TOTAL	UNDER 45	45-64	65-74	75-84	85 +	UNKNOWN
Conn.	263	92	71	41	36	12	11
N.J.	812	271	168	68	61	22	222
N.Y.	2,779	405	290	199	120	30	1,735
TOTAL:	3,854	768	529	308	217	64	1,968
% OF TOT:	100.0	19.9	13.7	7.9	5.6	1.6	51.0

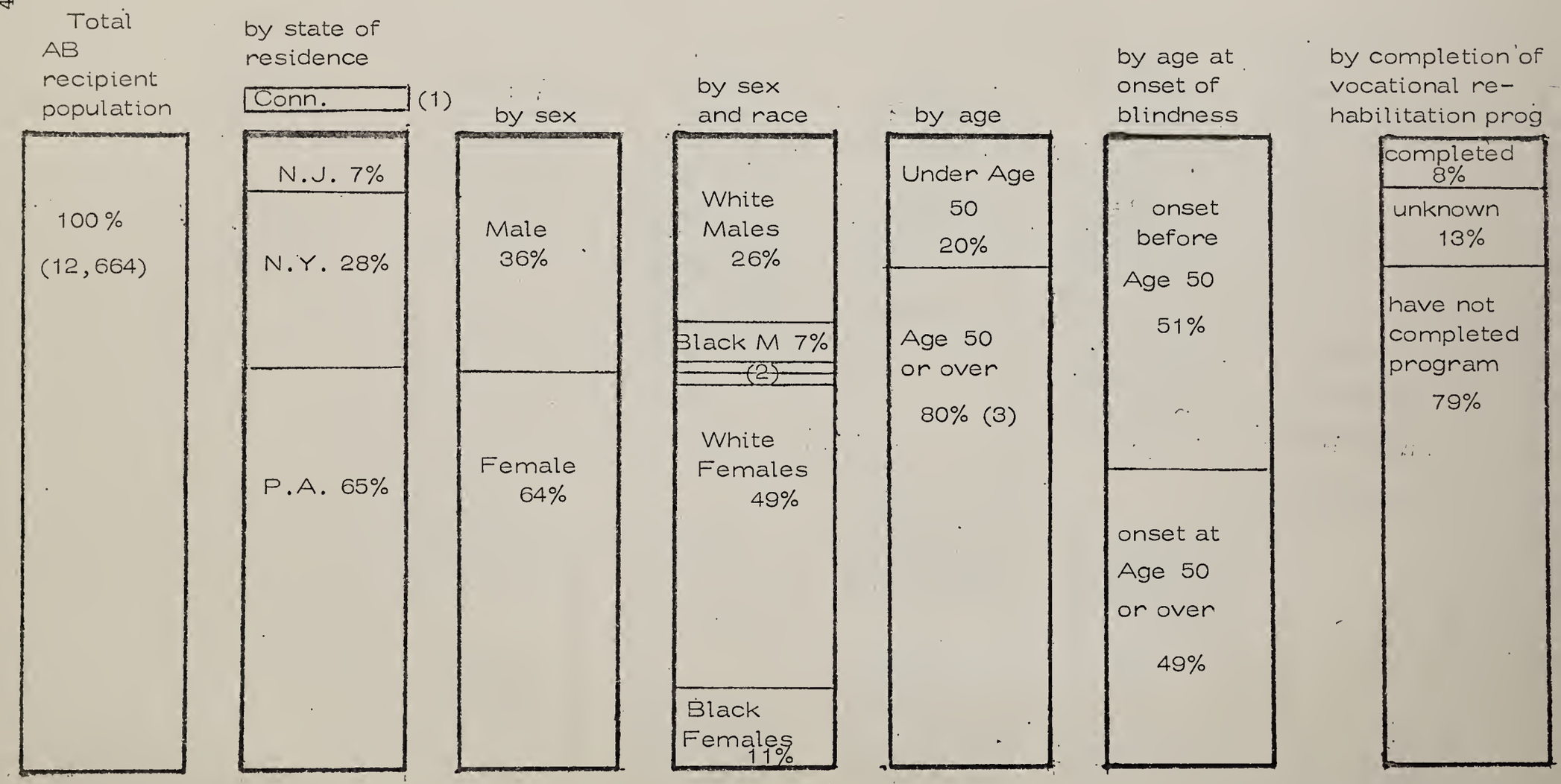
TABLE 6:

NUMBER OF BLIND PERSONS REGISTERED BY VISUAL ACUITY AND STATE (1970)

STATE	TOTAL	ABSOLUTE BLINDNESS	LIGHT PERCEPTION OR PROJETN	LESS THAN 5/200	5/200 TO LESS THAN 10/200	10/200 TO LESS THAN 20/200	20/200	REST FIELD	UNKNOWN
Conn.	3,766	411	474	543	360	464	859	193	462
N.J.	8,201	926	1,171	1,037	1,032	1,191	1,770	486	588
N.Y.	33,246	3,538	4,302	5,852	3,419	5,262	7,141	3,113	619
TOTAL	45,213	4,875	5,947	7,432	4,811	6,917	9,770	3,792	1,669
% OF TOT	100.0	10.8	13.2	16.4	10.6	15.3	21.6	8.4	3.7

APPENDIX B

Table 1: Summary Characteristics of the AB Recipient Population in the States of New Jersey, New York, and Pennsylvania (1970)

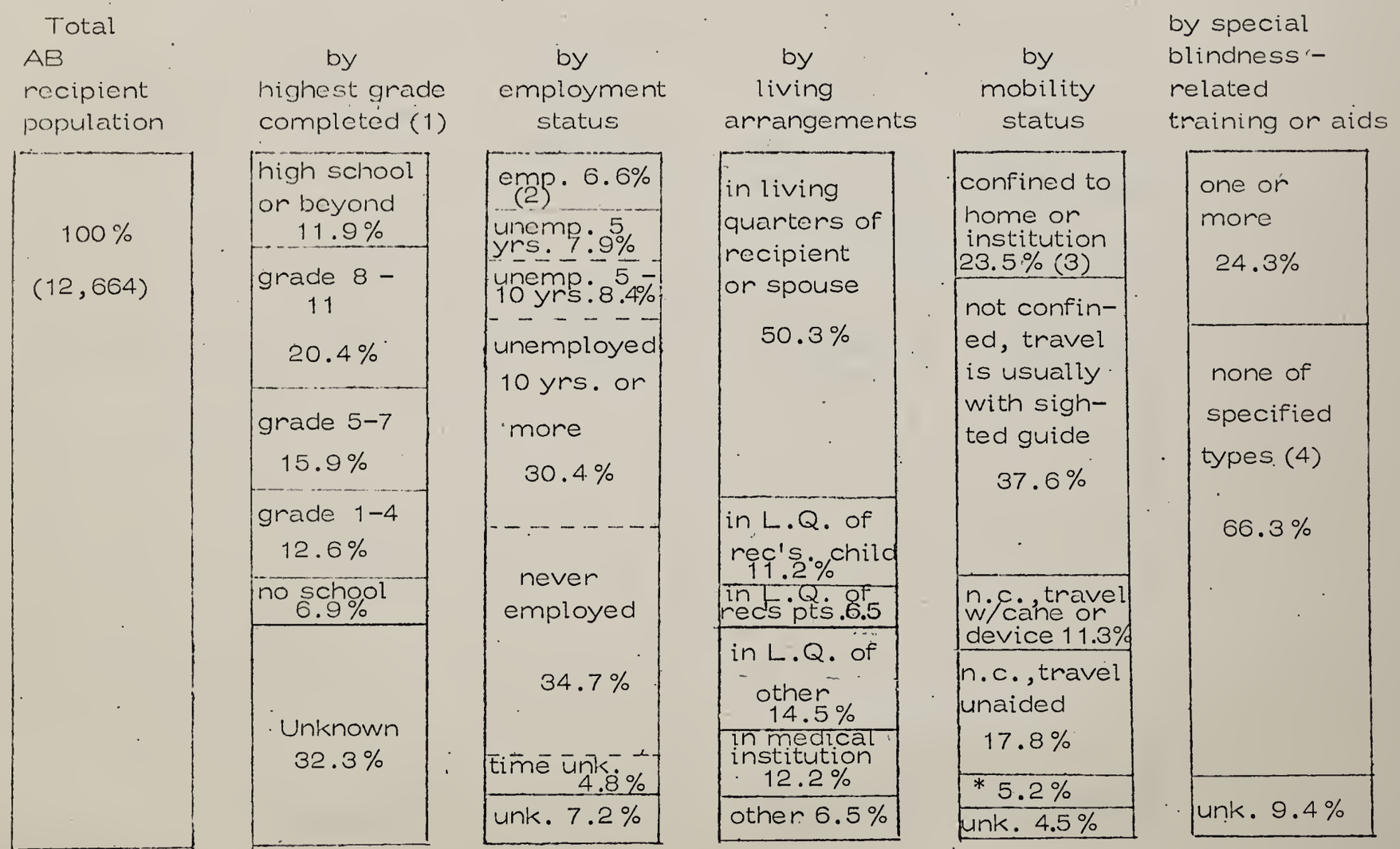


1. The number of AB recipients (1970) in Connecticut was 239; this figure is supplied only for comparative purposes. Connecticut's case load is not included in any of the other six categories.
2. Other, or unknown ethnicity: "Other" is less than 1%, "Unknown" ethnicity was reported for about 8% of the AB recipient population of the three states.
3. Persons age 55 and over comprise 74.4% of the studied population.

SOURCE: Findings of 1970 AB Study. DHEW Publication # (SRS) 73-03903

TABLE 2: AB Recipient Population in the States of New Jersey, New York, and Pennsylvania by Educational, Employment, Living Arrangement and Mobility Characteristics

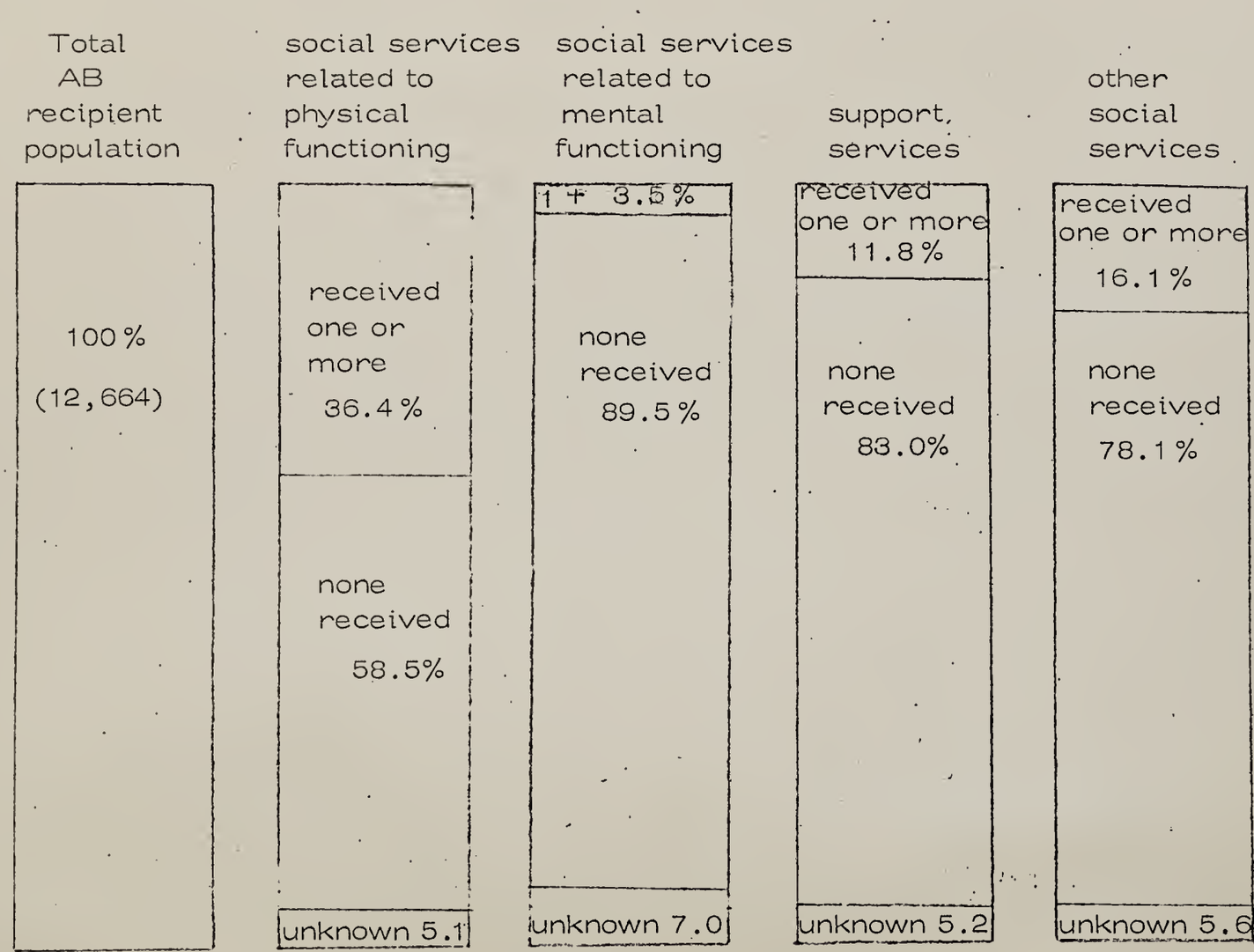
(1970)



* n.c. - travel usually with guide dog, wheel chair, or arrangement unknown.

1. Median highest grade completed 7.7 years
2. Full-time employment 3.0 %
3. 13.9 % of total are confined to home or institution and are neither bed fast nor chair fast.
4. Specified types: School for the blind, teaching in home under organized program, vocational rehabilitation training, owner of talking book machine, reads braille, other.

TABLE 3: AB Recipient Population in the States of New Jersey, New York, and Pennsylvania by Receipt of Social Services (1970)



SOURCE: Findings of 1970 AB Study. HEW Publication # (SRS) 73-03903